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[News, Profiles, Stocks and More about this company](#)Published / Filed: **Nov. 16, 1999 / April 5, 1999**Application Number: **JP1999000097105**IPC Code: **H01M 6//16; H01M 10//40;**Priority Number: **April 5, 1999 JP1999000097105**  
**April 5, 1999 JP1999199997105**

Abstract:

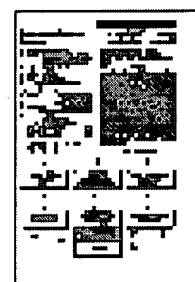
PROBLEM TO BE SOLVED: To provide an electrolyte having flame retardance while maintaining battery characteristics by including trialkyl phosphate.

SOLUTION: Trialkyl phosphate giving flame retardance to an electrolyte is represented by formula I. In the formula, R1-R3 are the same or different straight-chain or branched alkyl group having 1-4 carbon atoms. Specifically trimethyl phosphate and dimethyl phosphate may be mentioned. The content of the phosphoric ester in the electrolyte depends on the capacity requirement of a battery, but when the whole amount of the solvent is replaced by the phosphoric ester, the flame retardance of the battery is maximized. For increasing the flame retardance by adding to the electrolyte as an assistant solvent, 15 wt.% or more phosphoric ester is preferable, and addition of 30 wt.% or more phosphoric ester is more preferable. As the solvent for mixing, ethylene carbonate, for example, is mentioned.

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states:(71) Applicant: **MITSUBISHI CHEMICAL CORP**(72) Inventor: **UE MAKOTO**

(74) Representative:

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ELECTROLYTE FOR  
LITHIUM BATTERY**

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